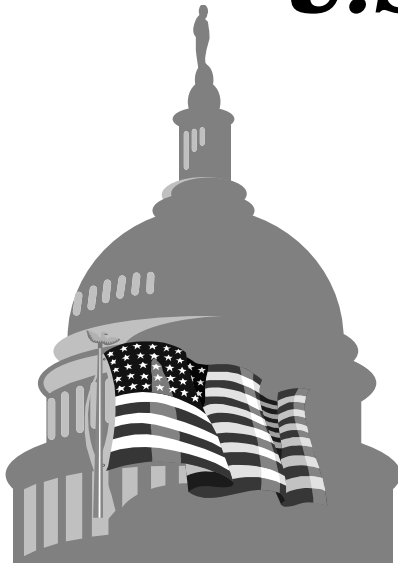


Alternative Fuel Vehicles

Dennis Smith

***National Clean Cities Program
U.S. Department of Energy***



***Alexandria, VA.
June 12, 2002***





Planning for the Future ...

Which Options to Consider ??

- **Methanol / Ethanol**
- **Natural Gas**
- **Propane**
- **Electric, Hybrid, Fuel Cell**
- **Bio-Fuels**
- **Improved Diesel**



U.S. Government Supports AFVs

- **Use Domestic Fuel Resources**
(Homeland Energy Security)
- **Improve Air Quality**
- **Provide Good Long-Term Investment**
- **Promote Economic Development**
- **Reduce vulnerability from Crude Oil Price Spikes and Shortages**

U.S. Government AFV Policy

- **Fuel Taxes**
 - ✓ Highway Tax
 - ✓ Ethanol Production Tax Credit
- **Energy Policy Act (1992)**
 - ✓ Vehicle and Refueling Tax Deductions
 - ✓ Vehicle Acquisition Requirements for Federal, State, and Fuel Provider Fleets
- **Proposed Energy Bill (2002)**
 - ✓ Tax credits for AFVs and Refueling Stations
 - ✓ 30 to 50 cents/gal fuel tax credit
- ***Voluntary National Clean Cities Program***

National Clean Cities Program

..... A voluntary, locally based government industry partnership program

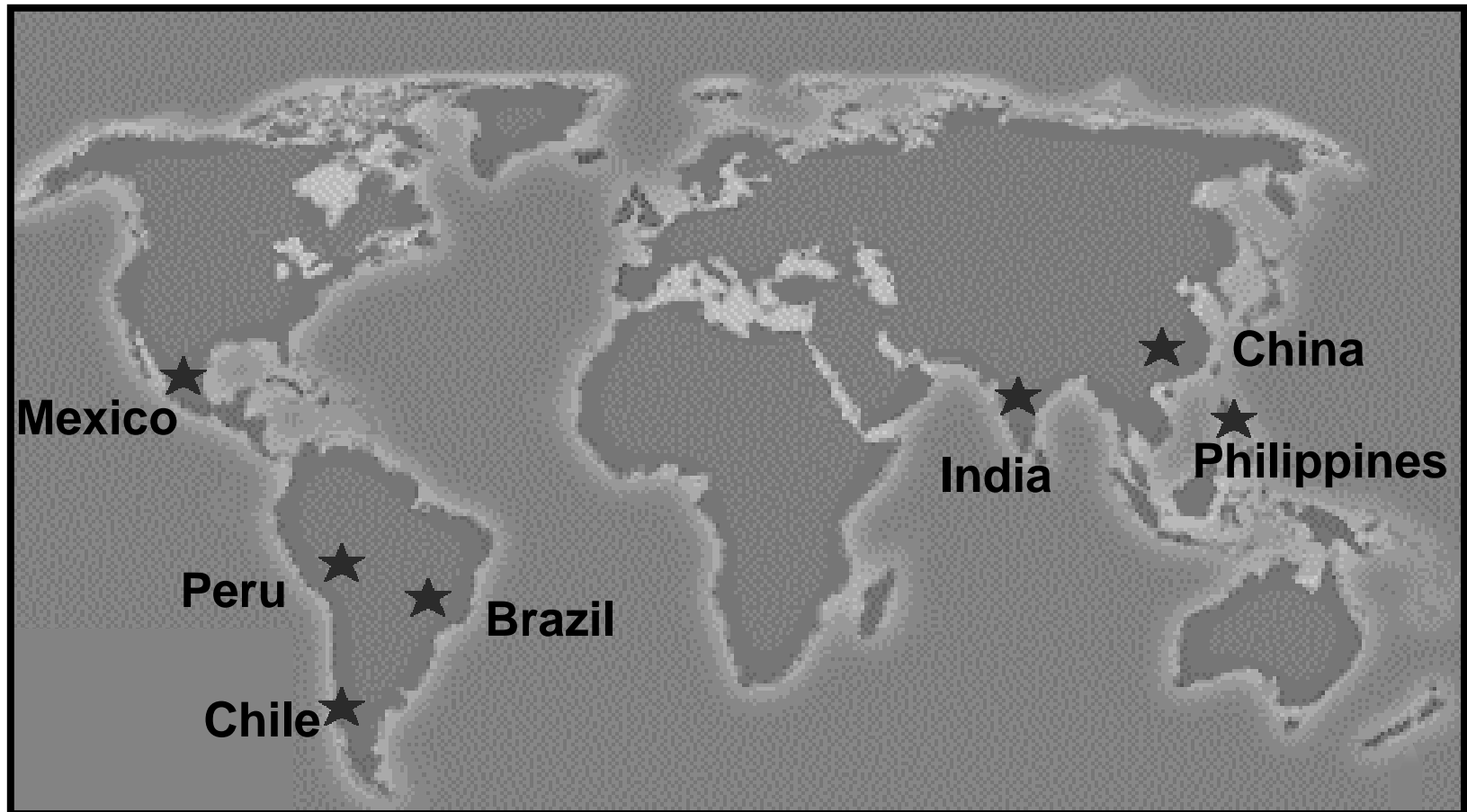
- **Currently 77 Active Cities**
- **Over 4,400 Stakeholders**
- **96 million gallons of petroleum displaced per year**
- **19,000 metric tons of emissions reduced per year**



Alternative Fuel Vehicles (AFVs) in the U.S.

- Alternative Fuel Vehicles (2002 estimates)
 - 110,000 CNG vehicles
 - 10,400 Electric vehicles
 - 269,000 Propane vehicles
- Alternative Fuel Refueling Stations
 - 1,280 Natural gas stations
 - 592 Electric rechargers
 - 3,353 Propane stations
 - 240 E85 stations
- Approximately 43 light-duty models available in 2002
- 100 medium/heavy-duty models available in 2002

Clean Cities Around the World



Clean Cities Lessons Learned

- Incentives to encourage purchases are key
- Accurate Technical Information is Critical
- **Flexible modeling and planning tools are Essential**
- Drivers & mechanics must be educated to allay safety concerns
- Ask advice from those with successful track records, anticipate challenges.
- Concentrate efforts on Niche markets first
- Every Little Bit Helps - Even Baby Steps
- There is NO Magic Bullet !

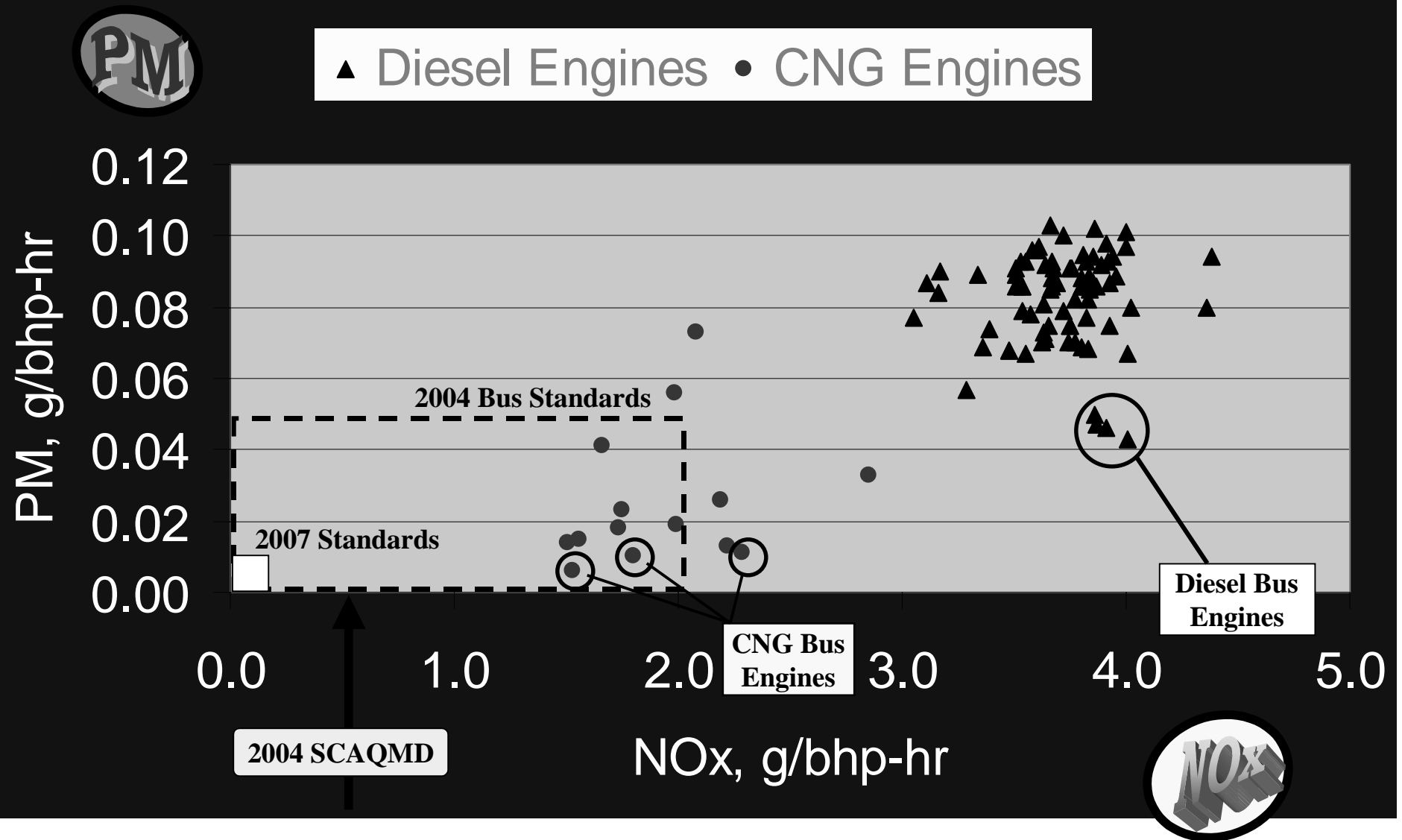
Niche Markets Have Much Potential



Niche Markets are Large Fuel Users

Vehicle	Total Population of Vehicles in U.S.	Fuel Use per Year for Total Population (million gal)
Transit Buses	50,000	500
School Buses	500,000	824
Average HDVs	3,927,700	17,260
UPS Medium Trucks	57,000	57
Private Fleet Light Trucks	2,330,000	1,255
FFVs using E85	750,000	404
Total Vehicles	7,614,700	20,300

2001 HDE Emission Certification Data



Consider a Dual Strategy

- ✓ **Retrofit Technologies for existing vehicles that will remain in service**
- ✓ **Cleanest Available (and reasonable) Technologies for all new vehicle purchases**

Separating Myth from Fact ...

Myths

can result from:

- **Mis-Information**
- **Partial Information**
- **Selective Data Screening**
- **Anecdotal Stories**
- **Enthusiastic Salespeople**

TIPS



- **Sound bites on clean fuel options are often oversimplified and may be misleading - dig in and study the details!**

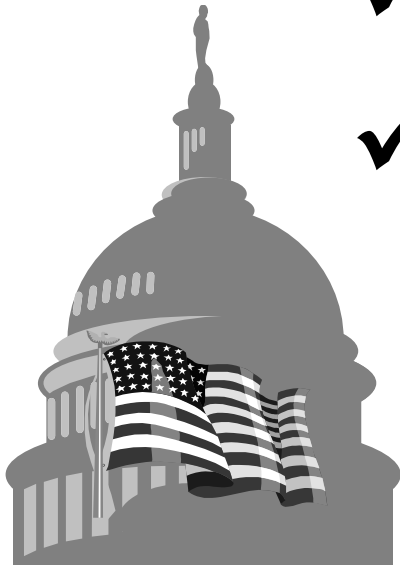
TIPS



- **Some “clean” fuel technologies are much more advanced than others.**
- **Avoid the ‘Brochure Test’**

www.ccities.doe.gov

- ✓ **AFV Case Studies**
- ✓ **Fact Sheets & Tools**
- ✓ **AFV Fleet User HELP**
- ✓ **Special Events**



Tools We Need

Chris Saricks
Argonne National Labs

